

1 **Amendment to the Specification**

2 **In the Specification:**

3 Please amend the specification as follows:

4 On Page 6, the paragraph beginning at line 28 should be replaced with the following:

5 A key feature of the present invention is multiplexing multiple discriminable
6 signaling elements per feature (~~or object~~) as a means of increasing the number
7 of different probes that can be employed and discriminated in a cell. This
8 enables the use of more probes within a cell than could otherwise be done with
9 conventional means, thereby enabling the collection of more information from
10 the cell. Each labeled probe includes a probe element that selectively binds to
11 a specific feature (~~or object~~), and at least one signaling element. The multiple
12 discriminable signaling elements may be associated with a single binding
13 element specific for the feature, or they may be associated with a set of binding
14 elements, all of which are specific for the same or different components of the
15 feature. Probes labeled in this manner can be used with biological cells where
16 the features are cellular components and can also be used with objects that
17 include features (i.e., features that are part of the object) to which the binding
18 elements can be selectively bound.

19 On Page 8, the paragraph beginning at line 20 should be replaced with the following:

20 In a second embodiment of the present invention, an optical signal is generated
21 by a plurality of labeled probes bound to the feature, each labeled probe
22 including the same binding element and at least one signaling element, each
23 signaling element having an optical signature, such that each different feature
24 is uniquely discriminable by the composite optical signature of its plurality of
25 bound probes. Note that while singly labeled probes similar to those illustrated
26 in FIGURE 2A are employed in this embodiment, the present method of using
27 such probes is distinguishable. In this embodiment each different feature ~~or~~
28 ~~object~~ is capable of binding multiple singly-colored probes, each having an
29 identical binding element, in sufficiently close physical proximity that the
30 imaging system is unable to spatially resolve the different probes. As a result,
the image of the feature ~~or object~~ contains a multiplexed signal very similar to
that which would be produced by a single multi-colored probe of the first
embodiment described above.